

# **Water Overflow from the flange of the top panel on the upper part of H6 tank area**

**Revised Version**

<Reference>

February 20, 2014

Tokyo Electric Power Company

- The amount of overflow is approx. 100m<sup>3</sup> (collection of overflowed water is underway), which has currently stopped by lowering the water level in the tank.
- It is deemed that no contaminated water has been flowed into the sea on the grounds that there are no drainages in the surrounding area of the site where the overflow found.
- Collection of overflowed water and soil where the overflow found has been commenced.
- It was confirmed by sight that, of three valves in the pipe extended from desalination system, two were opened while the other was closed. The valve in question may have let through contaminated water for some reason, whose cause is currently under investigation.
- In addition, it is confirmed that similar valves of other tanks are all closed.

# Outlines

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- Around 11:25PM February 19, a worker of a cooperative company found water was flowing out of the upper part of a tank in H6 area that contains RO concentrated salt\* water on his patrol in the tank area.
- As a result of inspecting the site, it is confirmed that water was escaping from the flange of the top panel on the upper tank, then downed though the rain gutter to the outside of the dike.
- Finding that acceptable valves of the tank were being opened (two locations), the said valves were closed to decrease the amount of water overflowed. Later at 5:40PM February 20, it was confirmed that the overflow has stopped by lowering the water level in the tank.
- The leakage part is cured with vinyl to keep the water flowing out.
- At 0:43AM today (February 20), it is determined that this incident will be applied to Article 18-12 of the Regulations Concerning The Operational Safety And The Protection Of Specified Nuclear Fuel Material At The TEPCO's Fukushima Daiichi NPS Nuclear Reactor Facilities that defines "a care when nuclear fuel material (not in the form of gas) or the like has leaked within an area controlled by the company due to an unpredictable event such as a failure of a nuclear reactor facility for power generation" stipulated in accordance with Article 62-3 of the Act On Regulation Of Nuclear Source Material, Nuclear Fuel Material And Nuclear Reactors.

## <Amount of overflow>

- Approx. 100m<sup>3</sup> (the amount of the overflow to the outside the dike)
- Collection of overflowed water and soil where the overflow found has been commenced.
- As the result of inspecting the overflow area, it is confirmed that no contaminated water has been flowed into the sea since there are no drainages in the surrounding area of the site where the overflow found.

## <Dose equivalent rate on the overflowed water surface>

- 70 μm dose equivalent rate: 50mSv/h (beta radiation)/ 1cm dose equivalent rate: 0.15mSv/h (gamma radiation)

## <Analysis result of overflowed water>

- See Appendix

## <Causes>

- Under investigation

\* Correction was made for this word. We apologize for the error.

# Chronological order

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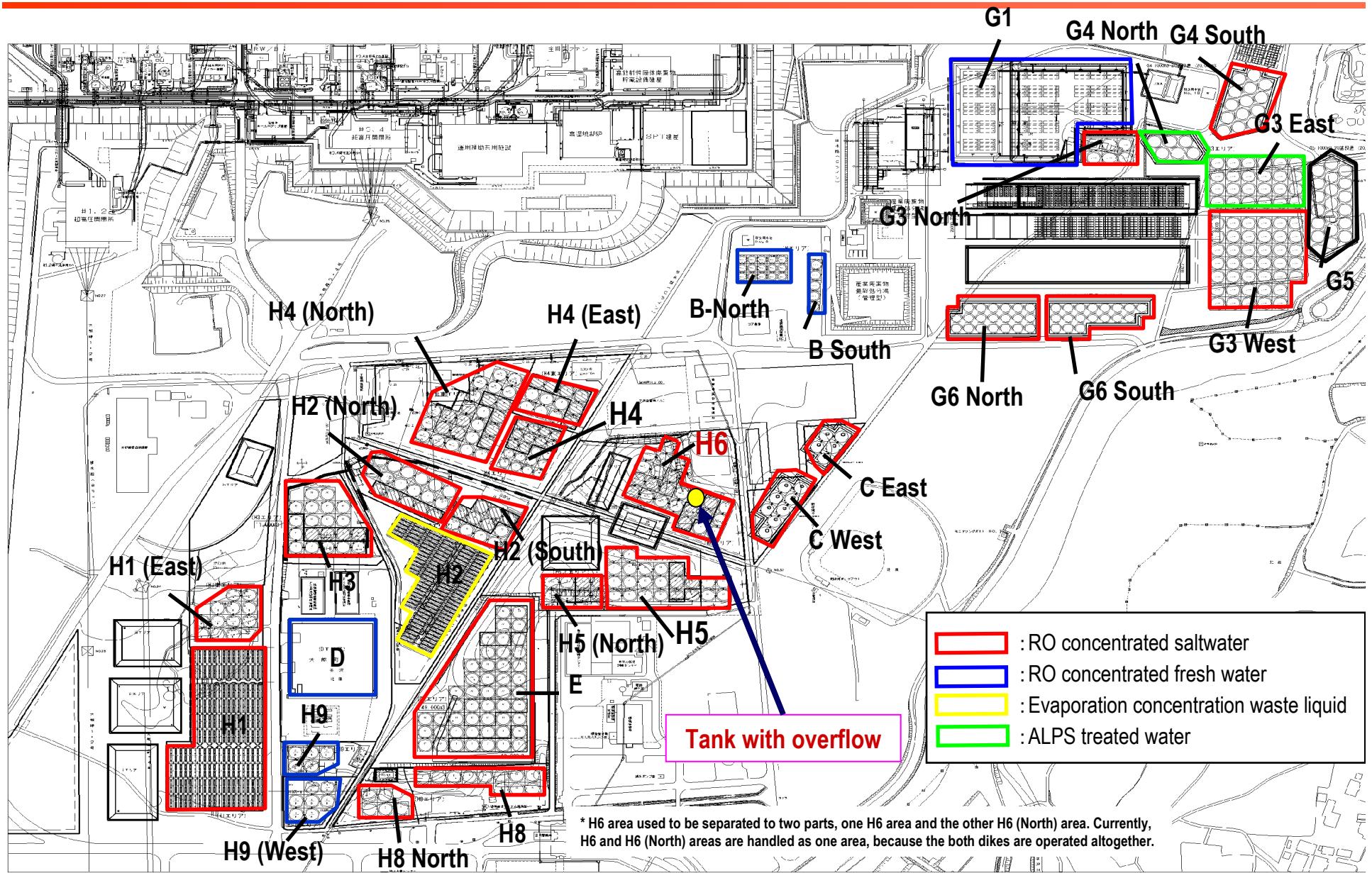
## ■ February 19, 2014

- 02:01 PM Alarm was issued for high-high water level at the H6N-C1 storage tank.  
Alarm set value; High water level refers to 96.3%, and high-high water level refers to 98.9%.
- 02:05 PM An associate company which found the alarm contacted a TEPCO employee.  
Immediately, the TEPCO employee contacted the tank patrol men, and secured that there was no transfer, inspection, or maintenance work for gauges. Therefore TEPCO determined the problem was caused by measurement system.
- 03:00 PM For making sure, a TEPCO patrol man checked the surrounding of the tank and found no abnormality.
- 04:00 PM An associate-company worker patrolled the tank and found no abnormality in the area.
- 11:25 PM An associate-company worker found that water was overflowing from the top of the tank in H6 tank area during the tank area patrol.

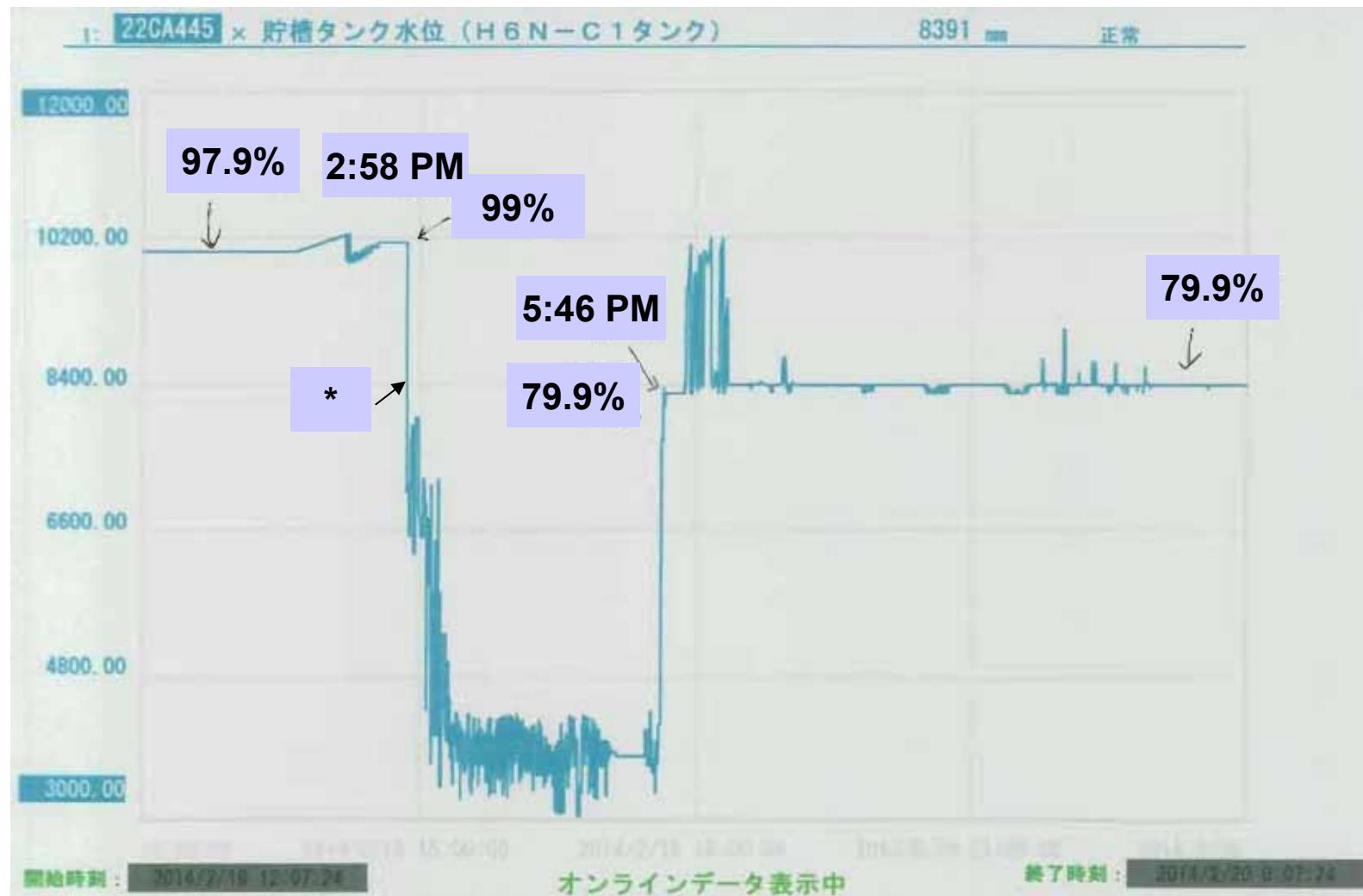
## ■ February 20, 2014

- At around 12:30 AM TEPCO found 1) water level is as high as the top plate, 2) water was overflowing from the flange part of the top plate, and 3) the water overflowed from the flange part flowed to the outside of the dike via a rain gutter. TEPCO started preparation to install sand bags to the point (outside the dike) where water was trickling.
- 12: 43 AM TEPCO determined that this incident corresponds to "a case when nuclear fuel material (not in the form of gas) etc, has leaked within an area controlled by the company due to an unpredictable event such as a failure of a nuclear reactor facility for power generation" as per Article 18, item 12 of the regulations concerning the operational safety and the protection of specified nuclear fuel material at the TEPCO's Fukushima Daiichi NPS nuclear reactor facilities.
- At around 01:30 AM The tip of the rain gutter was covered with vinyl protection. Inlet valves of the tank (2 valves) were open at this moment, and TEPCO has closed. Due to this act the amount of the overflowed water decreased.
- At around 02:10 AM The overflow outside of the dike was found in the size of approx. 3 meter × 30 meter. TEPCO continuously investigate to specify the range of water overflow.
- At around 03:30 AM Communication valves connecting to the other tanks in H6 area C-Group were opened, so that the water level of the tank can be lowered.
- At around 05:40 AM TEPCO secured that 1) the overflow stopped, and 2) the water level of C1 tank lowered to the point (47 cm from the top plate).

# Tank area layout



# Water Level Trend of the Overflowed Tank (H6N-C1)



# Sampling Results

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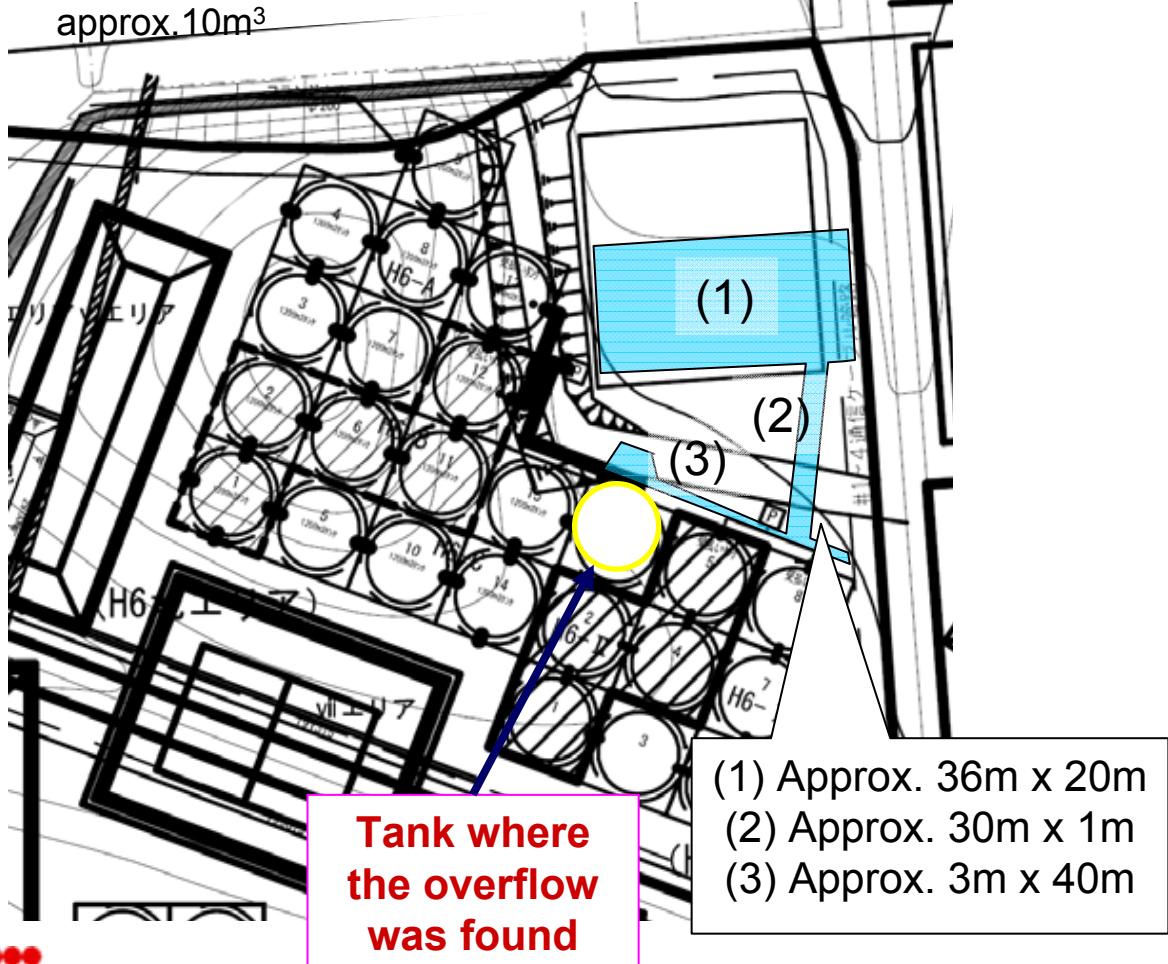
Unit: Bq/L

Sampling location	Water obtained at the rain gutter installed on the overflowed tank at the H6 area	Water inside the dike at the H6 area	[Reference] Desalination system concentrated water
Sampling date	At 12:00 AM on February 20, 2014	At 12:00 AM on February 20, 2014	At 11:20 AM on January 14, 2014
Cs-134	3.8E+03	4.2E+01	ND
Cs-137	9.3E+03	1.3E+02	2.6E+03
Co-60	1.8E+03	3.5E+01	3.4E+03
Mn-54	1.3E+03	2.2E+01	ND
Sb-125	4.1E+04	6.2E+02	1.8E+04
Gross $\beta$	2.3E+08	3.0E+06	5.5E+07

\* "ND" indicates that the measurement result is below the detection limit.

# Amount and Range of the Overflowed Water

- The area which where the overflowed water of approx.  $100\text{m}^3$  flowed to is the below three areas.
  - (1) Area where the desalination system (evaporative concentration) is installed
  - (2) U-shaped gutter where electric cable is accommodated
  - (3) Area near the H6 tank area dike
- Overflowed water which still remains inside of the dike is approx.  $10\text{m}^3$

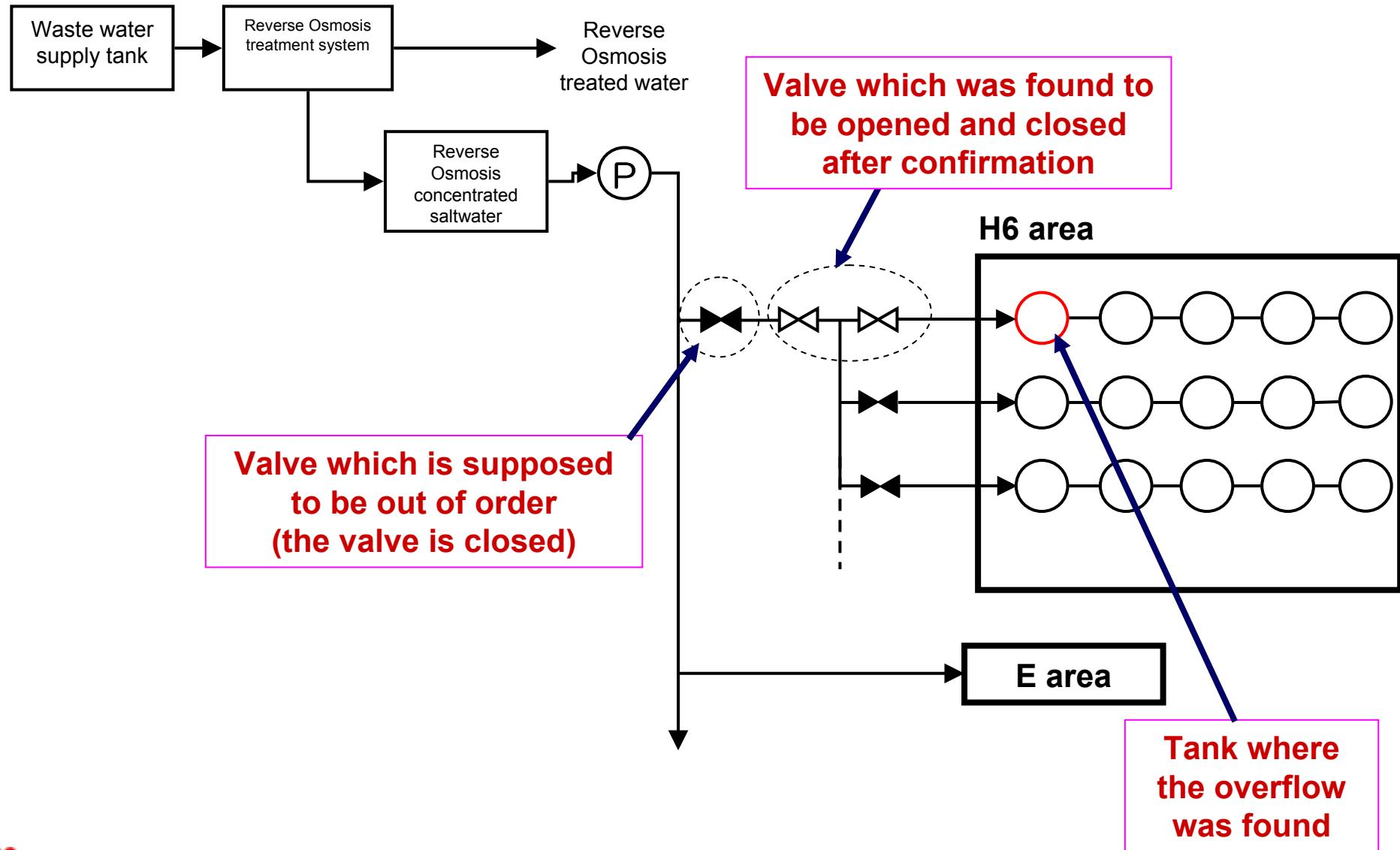


Condition of the overflow  
(Area (1))



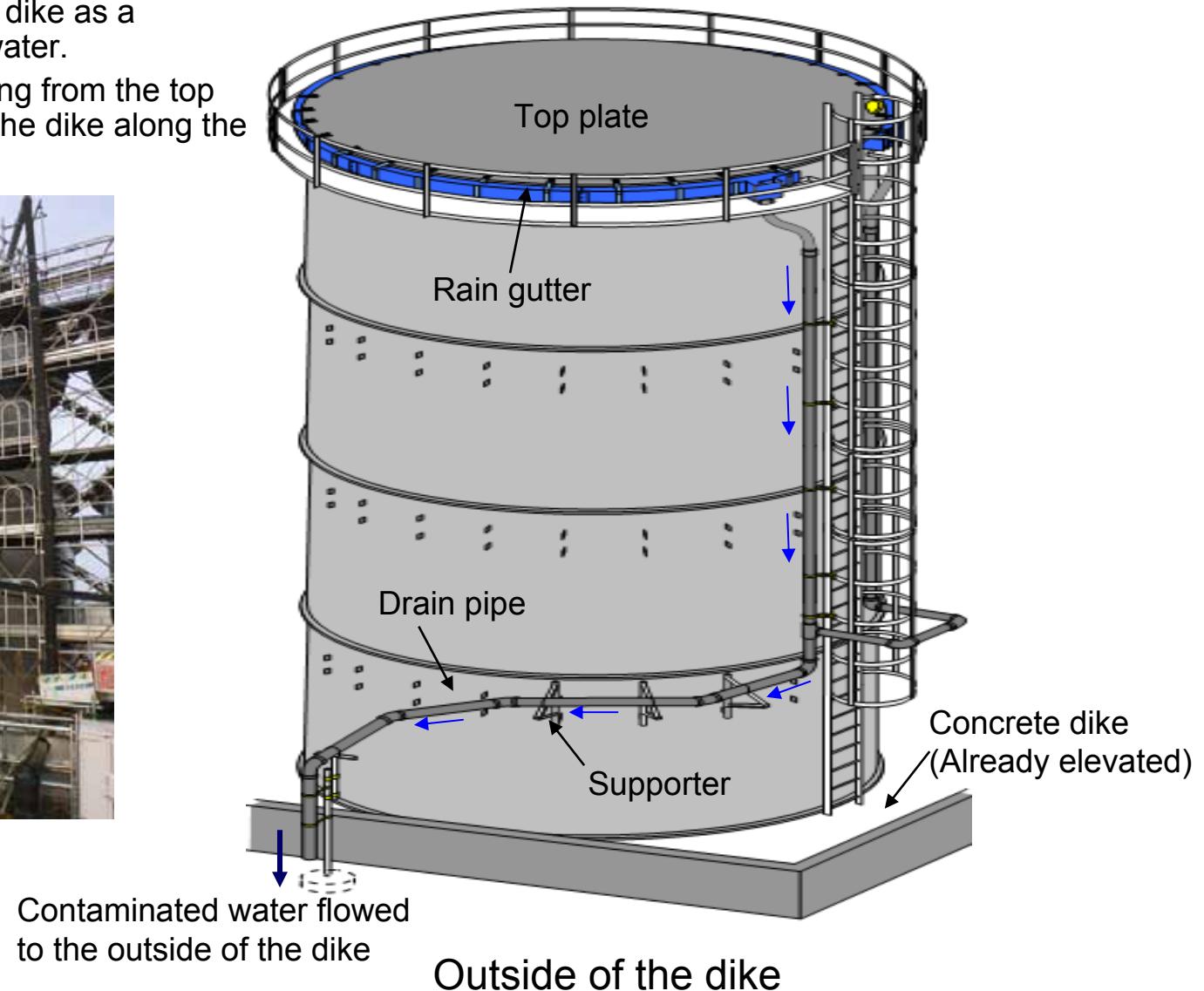
Condition of the overflow  
(Area (3))

# Schematic Diagram of Pipes Transferring Water Treated by the Desalination System (Concentrated Saltwater)



# Mechanism of the Outflow of Contaminated Water

- A rain gutter was installed in order to drain rainwater to the outside of the dike as a countermeasure against rainwater.
- Contaminated water overflowing from the top plate flowed to the outside of the dike along the rain gutter.



## Inspection result

- Valves corresponding to each tank section of H, G, and J1 areas.

Number of tanks: approx. 100

Result: No abnormalities found

